Faculty of Science

BIOR20, Biology: Sensory Biology, 15 credits

Biologi: Sinnesbiologi, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 and was last revised on 2018-09-28. The revised syllabus applies from 2018-09-28, spring semester 2019.

General Information

The course is elective for a Degree of Bachelor of Science or Degree of Master of Science (120 credits) in biology.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
Molecular Biology	A1N, Second cycle, has only first-cycle course/s as entry requirements
Biology	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

The general aim of the course is that student should understand and can account for the senses and sensory organs of animals, as well as make comparisons between different animal groups.

Knowledge and understanding

On completion of the course the student shall be able to:

- account for the molecular basis for the function of sensory cells
- account for the function of sensory organs and how information is processed in the nervous system, including all different senses and different animal groups

- explain the importance of senses for animal behaviour, communication and navigation
- describe experimental methods for studies of animals'senses and perception

Competence and skills
On completion of the course the student shall be able to:

- apply experimental methods for studies of animals'senses and perception

Judgement and approach
On completion of the course the student shall be able to:

- reflect on his/her knowledge and put this in relation to what is required for continued studies and work in neurobiology, zoology and ecology as well as in medical subject areas such as cognitive science or robotics

Course content

The course treats vision and other forms of light reception, smell, taste, hearing, balance, mechanoreception, electroreception, magnetoreception as well as senses for temperature and infrared radiation. All senses are studied are compared over the animal kingdom. During the course, methods of physiological, ethological and human psychofysiological nature are described and used.

The course consists of a series of sections which from both a theoretical and practical perspective treat different organizational levels, including cell- and molecular biology of the sensory cells, function of sensory organs, nervous system structure and its processing and integration of sensory information, and how sensory biology affect animal adaptation, behaviour and interactions with the environment (sensory ecology).

Furthermore, individual projects are carried out, where theoretical and practical knowledge is trained and deepened. This section ends with a one day symposium.

Course design

Teaching consists of lectures, seminars, demonstrations, laboratory sessions and project work. Group work includes e.g. to search information, solve problems and apply gained knowledge. The individual projects aim to strengthen ability to make written and oral presentations. Laboratory sessions, seminars, project work and associated components are compulsory.

Assessment

The examination takes place through written examinations and compulsory components during the course. For students who have not passed the regular examination, an additional examination in close connection to this is offered.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.
For laboratory sessions and other compulsory components the grading is Failed Passed. To pass the entire course, approved examinations and approved compulsory parts are required. The final grade is decided through a joining of results on examinations and project reports.

Entry requirements

For admission to course is required 90 credits scientific studies, including knowledge equivalent to MOBA01 Cell biology 15 credits, BIOA01 Genetics and microbiology 15 credits, 15 credits chemistry as well as BIOC01 Human Physiology 15 credits or BIOB02 Zoology 12 credits. English 6/English B.

Subcourses in BIOR20, Biology: Sensory Biology

Applies from H13

0711 Theory, 10,0 hp
Grading scale: Fail, Pass, Pass with distinction
0712 Laboratory Work and Mandatory Assignments, 5,0 hp
Grading scale: Fail, Pass

Applies from H07

0701 Sensory Biology, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction